



**ILR 350 Series
i-B350L W, Wristband Tag
Installation and Operation Manual**

PRELIMINARY



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IDENTEC SOLUTIONS AG,
Millennium Park 2, 6890 Lustenau, Austria

Phone: +43 5577 87387- 0, Fax: +43 5577 87387-15

E-Mail: info@identecsolutions.at

www.identecsolutions.com

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IDEN TEC SOLUTIONS is the responsible party for the compliance of the following devices:

MODELS:	i-B350L W, i-B350L W-PB	
Region/Country	Organization	Marking
EUROPE:	EC	CE
USA	FCC	FFC ID 004-ILR-IB350LW
Canada	Industry Canada	IC: 3538A-IB350LW

European Notification according R&TTE Directive

This equipment complies to Art. 6.4 of R&TTE Directive (1999/5/EC). It is tested for compliance with the following standards: ETSI EN 300 220, ETSI EN 301 489, EN 60950

USA Notification

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The user(s) of these products are cautioned to only use accessories and peripherals approved, in advance, by IDEN TEC SOLUTIONS. The use of accessories and peripherals, other than those approved by IDEN TEC SOLUTIONS, or any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate the equipment.

Canada Notification

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Printed in Austria

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1 Introduction

1.1 Preparations

This installation manual must be read carefully prior to starting the installation. The described installation works assume that installation materials like cable, antenna, tag holder, etc. are available.

1.2 Recommended Procedure

1. Check the Scope of Delivery according to the Bill of Delivery
2. Read this manual completely
3. Do the initial operation for every single tag
4. Mount the tags
5. An additional performance check of the tags and a system test can now be done

1.3 Scope of this Document

This document is the users' manual of the models i-B350L W and i-B350L W-PB. This document is intended only for mechanical installation resp. everyday use.

1.4 Responsibility

IDEN TEC SOLUTIONS is not responsible for any errors occurring in this document.

1.5 Associated Documents

- i-B350L W — ILR350 Wristband Tag Datasheet

1.6 Scope of Delivery—Visual Inspection

Check delivery whether it is complete and for any damages. If the delivery is not complete or damaged immediately inform the carrier. The dispatch and service organization of IDEN TEC SOLUTIONS should also be informed to facilitate the repair or exchange of the system.

2 Safety Precautions

Important Safety Note

The devices described in this manual are for exclusive operation by trained employees. Only qualified personnel that know the potential dangers involved should perform the installation, settings, maintenance and repair of the units used.

Operational Safety

The correct and safe use of these systems assumes that operating and service personnel follow the safety measures described in the manual alongside the generally acceptable safety procedures.

If there is a possibility where a safe operation cannot be guaranteed, the system must be switched off and secured against accidental use. Then, the service unit responsible must be informed.

Do not open the housing

There is no need to open the housing. There are no user serviceable parts inside. Set-up and configuration during initial operation is done wireless with the built-in air interface.

Handling Safety

In the event of high operating temperature of 70 °C (+158 °F), the tags are heated and must be handled with care. To prevent burns, wait until the tags have cooled down or use appropriate gloves. At temperatures below 0 °C (+32 °F) tags can be frozen. In this case, wait a while until tags are warmed up or use appropriate gloves.

Battery Inside

All tags contain a battery. That is the reason for the following instructions:

Warning

Fire, explosion and burn hazard

Risk of explosion if battery is replaced by an incorrect type

Do not recharge, short circuit, crush, disassemble, heat above 70 °C (158 °F)

Do not incinerate, or expose contents to water

Electrostatic Discharge



This product contains components that are sensitive to electrostatic discharges. Please observe the special instructions for their protection. Incorrect handling can damage the unit and cause the invalidation of the warranty.

Safety Documents

This ILR system was designed, tested and supplied in perfect condition according to the test report document EN60950.

Condensation/Change of Temperature

Moving the systems from a cold to a warm environment could lead to dangerous situations due to condensation. Therefore it must be ensured that the system can adjust itself to the warmer temperature.



Spare Parts

We recommend that only original products, spare and replacement parts authorized by IDEN TEC SOLUTIONS be used for installation, service and repair. Otherwise IDEN TEC SOLUTIONS does not accept any responsibility for materials used, work carried out or possible consequences.

3 General

3.1 Optical Identification of the Tag

The wristband is available in two options. With or without Push Button.



The label on the back side of the tag, is protected by the wristband. In order to inspect it slightly lift up the wristband between the two loops of the tag housing.



3.2 Accessories

Multi use NATO wristband

P/N: 439471



Single use, temper proof vinyl wristband.

P/N: 439370



4 Configuration of the tag

The i-B350L W is configured using the i-PROG M350L programming device.

Important Note

Do not open the housing! Configuration is done using the built-in air interface of the i-B350L W.

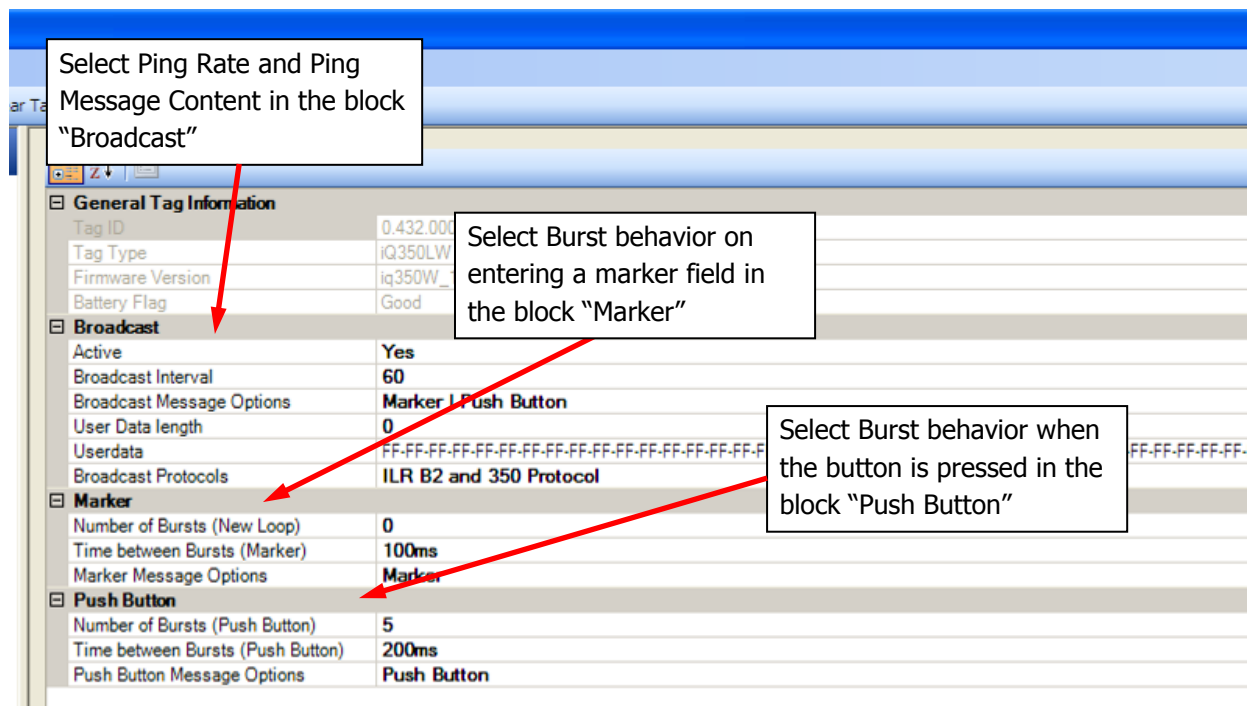
In addition to the Broadcast mode the i-B350L W offers the following special functions that can be configured:

- Bursts on entering a marker field can be configured independent from regular Pings
- Marker technology
- Bursts triggered by the push button can be configured independent from regular Pings

Tools Needed

- PC running on MS Windows with the ILR Tag Configuration for ILR 350 series tags
- Connected to an i-PROG M350L to configure the tags

Overview on the Configuration Software



The screenshot displays the configuration software interface for an ILR tag. It shows a tree view on the left with three main sections: General Tag Information, Broadcast, Marker, and Push Button. The right pane shows the configuration details for the selected section. Three callout boxes with red arrows point to specific settings:

- Callout 1:** "Select Ping Rate and Ping Message Content in the block 'Broadcast'". This points to the **Broadcast Message Options** field, which is set to **Marker | Push Button**.
- Callout 2:** "Select Burst behavior on entering a marker field in the block 'Marker'". This points to the **Marker Message Options** field, which is set to **Marker**.
- Callout 3:** "Select Burst behavior when the button is pressed in the block 'Push Button'". This points to the **Push Button Message Options** field, which is set to **Push Button**.

Section	Property	Value
General Tag Information	Tag ID	0.432.000
	Tag Type	iQ350LW
	Firmware Version	iq350W...
	Battery Flag	Good
Broadcast	Active	Yes
	Broadcast Interval	60
	Broadcast Message Options	Marker Push Button
	User Data length	0
	Broadcast Protocols	ILR B2 and 350 Protocol
Marker	Number of Bursts (New Loop)	0
	Time between Bursts (Marker)	100ms
	Marker Message Options	Marker
	Push Button	
Push Button	Number of Bursts (Push Button)	5
	Time between Bursts (Push Button)	200ms
	Push Button Message Options	Push Button

4.1 Ping Rate

Note: This settings can be found in the ILR Tag Configuration software tool in the edit block "Broadcast"

- Broadcast Interval: 0 = no broadcast messages are sent, value > 0 = Broadcast interval in seconds. This can be set in steps of 0.5 sec, from 0.5 to 300 seconds.
- Broadcast Message Options: The options in this field depend on the capabilities of the tag.
- User Data Length: Configure the number of Bytes from the "User Data" that is sent with a broadcast message. The number starts from Byte 0 (zero). Please pay attention to the limits of the User Data Length described at the end of this chapter.

4.2 Bursts when passing a Position Marker

Note: This settings can be found in the ILR Tag Configuration software tool in the edit block "Marker"

- Number of Bursts (New Loop): 0 = no bursts, max. 15 bursts
- Time between Bursts (Marker): This sets a timeslot inside which the tag sends out as single burst. This gives a random delay between every single burst message to avoid collisions with tags that are triggered by the same source to burst. Possible settings are 40, 100, 200, 300, 400, 500, 600, and 700 ms. Please read the details in the following subchapter "Information on Burst Settings".
- Marker Message Options: Entering a marker field triggers a burst. This parameter determines the contents of the burst messages.

4.3 Bursts triggered by the Push Button

- Number of Bursts (Push Button): 0 = no bursts, max. 15 bursts
- Time between Bursts (Push Button): This sets a timeslot inside which the tag sends out a single burst. This gives a random delay between every single burst message to avoid collisions with tags that are triggered by the same source to burst. Possible settings are 100, 200, 300, 400, 500, 600, and 700 ms. Please read the details in the following subchapter "Information on Burst Settings".
- Push Button Message Options: Pushing the button triggers a burst. This parameter determines the contents of the burst messages.

4.4 Limitations of the User Data Field

The total length of the broadcast message (burst or ping) is limited to 50 Bytes. So depending on the broadcast message options, these are the allowed number of bytes for the user data:

- User Data only => max. 50 Bytes of user data
- Marker | User Data => max. 38 Bytes of user data

- Marker | Push Button | User Data => max. 32 Bytes Bytes of user data
- Push Button | User Data => max. 43 Bytes of user data
- Push Button | User Data | Marker => max. 32 Bytes of user data

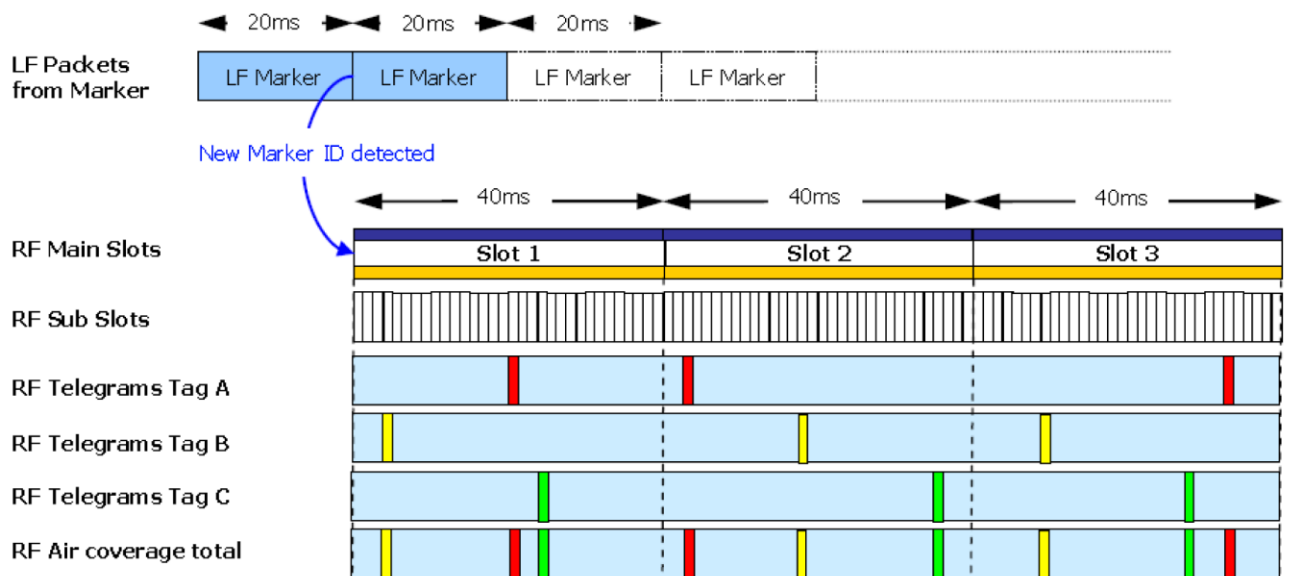
4.5 Information on Burst Settings

The parameter "Time between Bursts (Marker)" is not simply a delay time. It is in fact a timeslot. In this timeslot the tag chooses a random moment to do a single burst. This avoids that bursts collide with other tags, that are simultaneously triggered by the same marker loop. These timeslots are repeated until all bursts are sent.

With very few tags the factory setting of 40 ms is sufficient. In case there is the possibility that dozens of tags are triggered to burst at once, this value can be increased. This brings the tradeoff of a longer overall time until all bursts are sent. E.g. with a slot width (Time between Bursts) of 700 ms and 8 bursts, the amount of time for all bursts is 5.6 seconds.

Example

This example shows 3 tags (A, B, C) that are simultaneously triggered by a marker loop (LF marker) and are configured to burst 3 times. The timeslot (Time between Bursts) is set to the default of 40 ms.

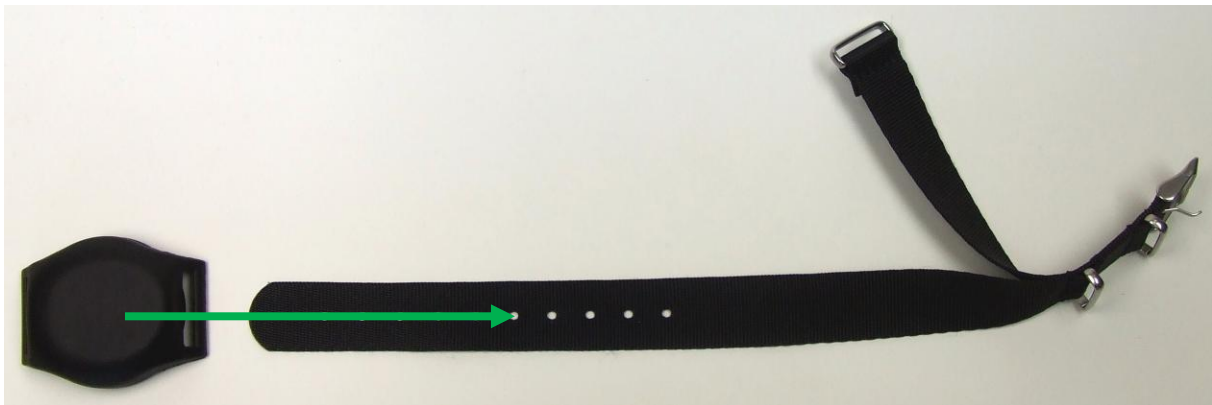


The last row shows how the random use of the timeslot avoids collision between the tags.

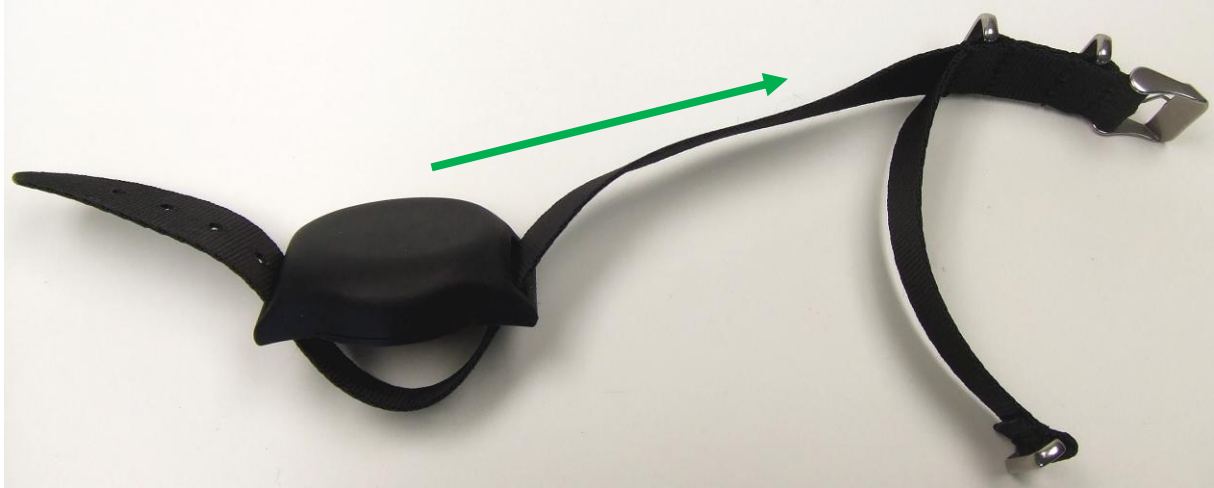
5 Tag Mounting Techniques

5.1 Multi use NATO wristband

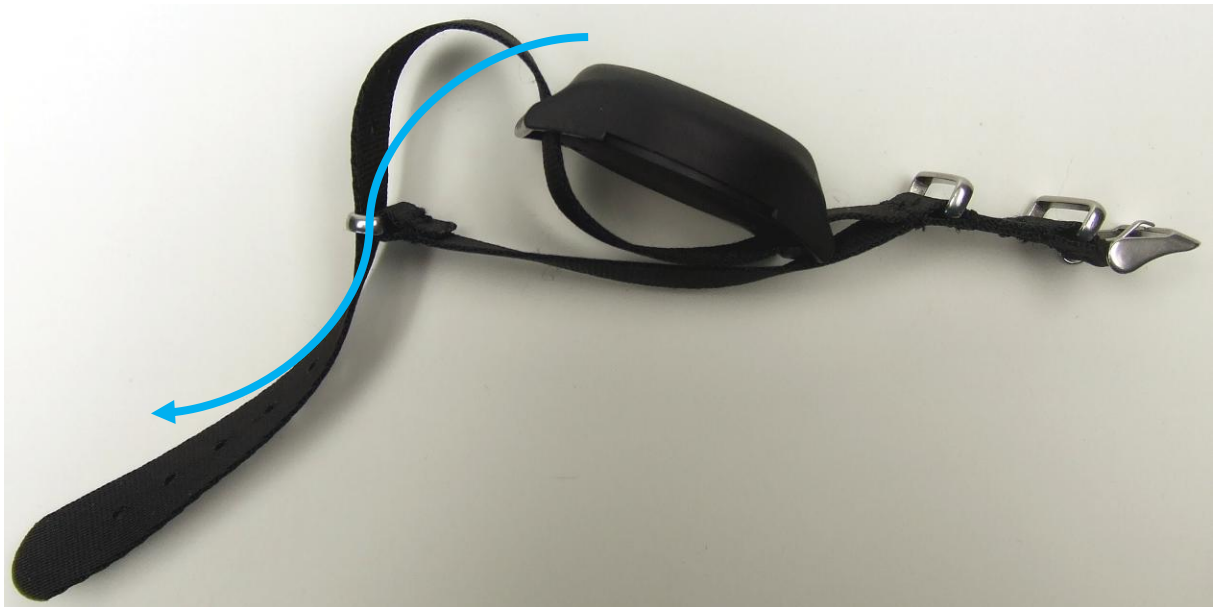
Mounting tag on wristband



Put the longer strap through the holder on the housing first from the top side to the bottom side, and then from the bottom-side to the top side, so that the tag is on top side of the wristband.



Shift the tag back on the longer strap, as far as possible.



Put the longer strap through the ring of the shorter one and tight it up.



Correct assembled wristband tag with multi use NATO wristband.

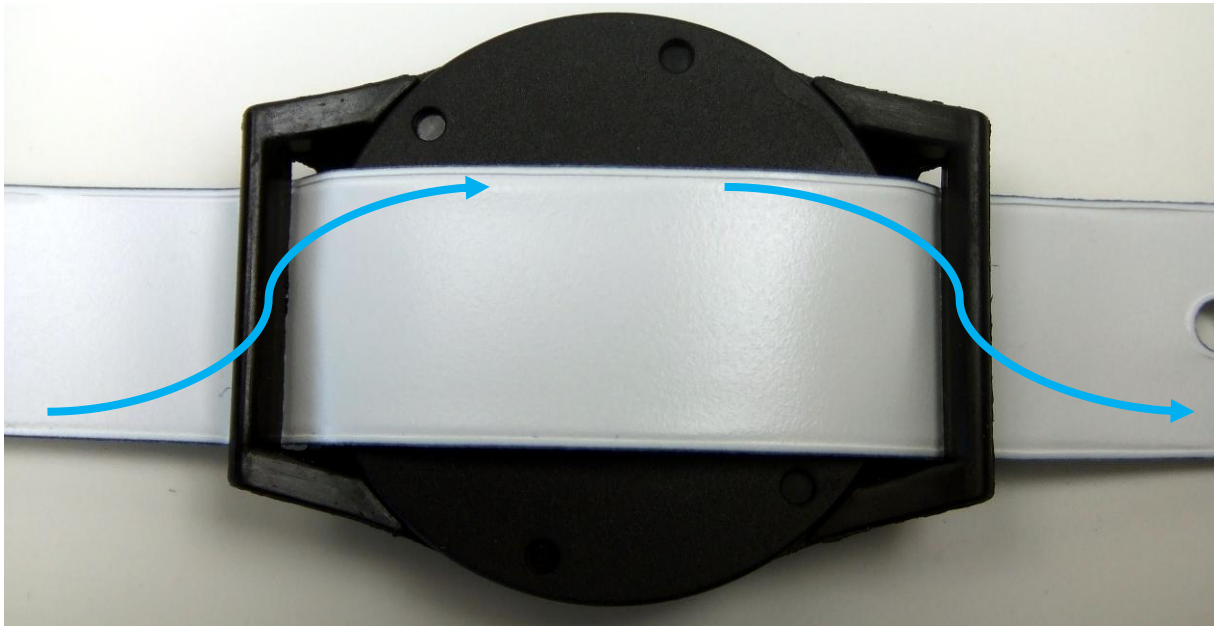


The tag is carried the same as any standard wristwatch. The band should not be too loose. This avoids that the tag slides down over the wrist and prevents possible injury.



For maximum convenience put the end of the wristband through the two metallic loops.

5.2 Single use vinyl wristband



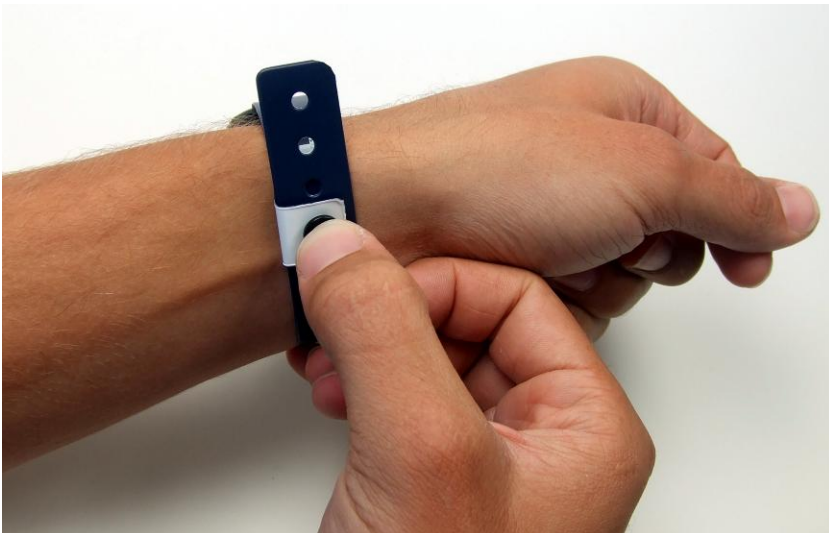
Put the tag on the blue-side-up wristband. Put the strap from the up side to the lower side and then from the lower side to the top side.



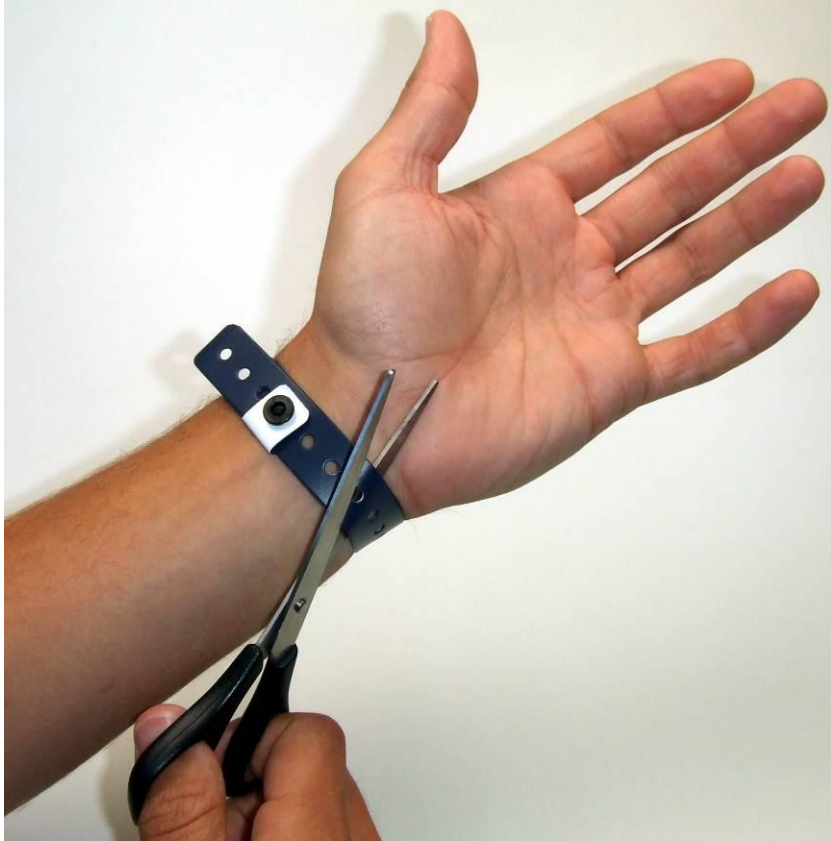
Correct assembled wristband tag with single use vinyl wristband.



The tag is carried the same as any standard wristwatch. The band should not be too loose. This avoids that the tag slides down over the wrist and prevents possible injury.



Close the plastic fastener by pushing it from top until a clicking noise can be heard.



To remove the wristband, cut it carefully with scissors.
To avoid serious injuries, do not use a knife to remove the tag.

6 Maintenance

6.1 General

When installed correctly the ILR System will operate virtually maintenance free for many years. However, in the event maintenance is required only trained and authorized personnel are permitted to perform the updates, changes and maintenance necessary.

6.2 Regular Cleaning of The Surface

Remove dust with a brush or compressed air. If there are fatty or oily substances use a soft cloth moistened with a mild rinsing agent.

Warning

Do not clean the tag in a dishwasher. Do not sandblast the tag. Do not use high pressure water jet or steam cleaner. Do not use cleaning products containing chemical additives.

6.3 Precautionary Maintenance

A regular check of the system is recommended. Unstable connections could lead to damage and malfunctions of the system and should therefore be repaired as soon as possible.

A Brief Checklist

- Are all housings intact?
- Are all cables intact?
- Are all connectors intact?
- Are all connectors securely fastened?
- Are all screws still tight?
- Is there a malfunction at a specific unit?

6.4 Returns

Parts or main components returned for repair or exchange must be handled with great care. PC cards must be returned in the appropriate ESD-protecting packaging material. All returns should include an error description and a short application overview and be sent to the local distributor or to:

IDENTEC SOLUTIONS AG
Service Department
Millenium Park 2
6890 Lustenau
AUSTRIA

7 Technical Data

Operating Data

Operating frequency ILR-RFID	868 MHz (EU) or 920 MHz (NA)
Maximum transmission power	0.75mW (EU / NA)
Compatibility	i-PORT M 350, i-CARD CF-350
Standards/Certification	FCC Part 15 (US), ETSI EN 300 220 (EU)

Communication Data Long-Range RFID (ILR, Beacon Technology)

Read range broadcast	Up to 150 m (490 feet) free air*
Operation mode	Transmits marker information in at regular intervals
Repetition rate (ping rate)	0,5 – 300 seconds, adjustable in steps of 0,5 seconds
Data rate broadcast	115.2 kbits/s

*The communication range depends on the antenna type, the antenna cable runs and the environmental conditions.

Communication Data Inductive Loop (Marker)

Read range	Up to several meters
Operating frequency	125 kHz (world-wide approved)
Operation mode	Receives marker ID number and transmits marker information several times

Electrical Data

Power supply	Lithium battery (not replaceable)
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Configuration

Ping rate	Configurable from 0.5 to 300 seconds in steps of 0.5 seconds
Number of Bursts	Configurable from 0 to 15

Environmental Conditions

Operating temperature	-30 to +70 °C (-22 to +158 °F)
Shock	50 G, 3 times acc. DIN IEC 68-2-27 several times onto concrete floor from 1 m height
Vibration	3 G, 20 sine wave cycles, 5 to 150 Hz, DIN IEC 68-2-6 5 G, noise 5 to 1.000 Hz, 30 minutes DIN IEC 68-2-64

Mechanical Data

Dimensions	52 × 42 × 14mm (2.04 × 1.65 × 0.55 inches)
Casing	Plastics
Mass	40 g
Protection class	IP 68

Certifications

EMC	CE (EN 300 220-1, -3; ETSI EN 301 489-1, -3), FCC Part 15 (US), Industry Canada
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Dimensional Drawing

Dimensions in mm

